

REMARKS

The application includes claims 1-6 and 21-28 prior to entering this amendment.

The examiner objects to claim 23 as improperly depending from canceled claim 7.

The examiner withdraws claims 25-28 from consideration as being directed to a non-elected invention.

The examiner rejects claims 1-6, 21, 22, and 24 under 35 U.S.C. § 103(a) as being unpatentable over Sasagawa, et al. (U.S. Patent No. 6,454,452) in view of Pelka, et al. (U.S. Patent No. 6,647,199).

The examiner rejects claim 23 under 35 U.S.C. § 103(a) as being unpatentable over Sasagawa, et al. (U.S. Patent No. 6,454,452) in view of Pelka and Bourdelais, et al. (U.S. Patent No. 6,846,098).

The applicants amend claim 23.

The applicants cancel claims 25-28 without traverse pursuant to the examiner's restriction requirement.

The applicants add new claims 29-33.

The application remains with claims 1-6, 21-24, and 29-35 after entering this amendment.

The applicants add no new matter and request reconsideration in view of the following remarks. The applicants point out that the claimed subject matter may be patentably distinguished from the cited reference(s) for multiple reasons; however, the following remarks are believed to be sufficient. Likewise, it is noted that the applicants' failure to comment directly on any of the positions asserted by the examiner in the office action does not indicate agreement or acquiescence with those asserted positions.

Claim Objections

The examiner objects to claim 23 as improperly depending from canceled claim 7. The applicants herein amend claim 23 as suggested by the Examiner.

Claim Rejections Under § 103

The examiner rejects claims 1-6, 21, 22, and 24 as being unpatentable over Sasagawa in view of Pelka. The examiner rejects claim 23 as being unpatentable over Sasagawa in view of

Pelka and Bourdelais. The applicants respectfully traverse the rejections for the reasons that follow.

Claim 1 recites (emphasis added):

A light guide plate structure comprising:

a light guide plate, comprising at least one light incident surface, a light scattering surface and a light emitting surface, wherein the light incident surface is on a sidewall of the light guide plate, the light scattering surface is on a bottom surface of the light guide plate, the light emitting surface is on a top surface of the light guide plate, wherein the light scattering surface has a plurality of notches extending up from underneath the bottom surface of the light guide plate; and

a plurality of transparent element structures associated with the plurality of notches and having solid side walls continuously extending between first and second surfaces so that the first surfaces are within the plurality of notches and the second surfaces are outside the bottom surface of the light guide plate, wherein a refractive index of the plurality of transparent element structures is different from that of the light guide plate.

The examiner makes the following arguments with regard to independent claims 1:

1) That Sasagawa's apparatus is the same as the applicants' light guide plate structure if air is considered to be a component of Sasagawa's structure. The examiner indicates: "The mere fact that these structures are made of air structured by the boundaries of the notches does not diminish their significance."¹

2) That Pelka, through teaching a shape of a "display element" teaches the applicants' "newly added limitations of having first and second surfaces so that the first surfaces are within the plurality of notches and the second surfaces are outside the plurality of notches [convex or protruding]."²

The examiner is trying to read the applicant's "transparent element structures" on Sasagawa's air, and is then trying to use Pelka to provide the applicant's "at least one surface that is outside of the plurality of notches".

¹ Office Action, page 4.

² Office Action, page 6.

Sasagawa

First, there are no notches described in Sasagawa that extend up from underneath the bottom surface of the light guide plate as recited in claim 1. The air spaces between wedges 4 in Sasagawa reside on the top surface of bottom surface 22 and do not extend up from underneath the bottom surface 22.

Second, the air referred to by the examiner cannot be interpreted as transparent element with solid side walls as now recited in amended claim 1. Air by definition is not a solid.

Finally, the air either between wedges 4 or inside of wedges 4 in Sasagawa does not have *solid side walls continuously extending between first and second surfaces so that the first surfaces are within the plurality of notches and the second surfaces are outside the bottom surface of the of the light guide plate* as also recited in claim 1.

Air does not have solid walls and first and second surfaces. The wedges 4 in Sasagawa may have surfaces but air simply surrounds those wedge surfaces and does not form its own surfaces or walls. The air in-between wedges 4 in Sasagawa also does not have solid side walls that continuously extend from in-between wedges 4 to below bottom wall 22. The bottom wall 22 in Sasagawa prevents forming a continuous air stream from in-between wedges 4 to underneath bottom wall 22. The air inside of wedges 4 also cannot continuously extend below bottom wall 22 and the air below bottom wall 22 cannot continuously extend up in-between wedges 4.

Pelka

The examiner states at page 6 of the Office Action that Pelka in FIG. 24 describes convex or protruding display elements 142 that teach transparent element structures having first and second surfaces so that the first surfaces are within the plurality of notches and the second surfaces are outside the plurality of notches.

A first problem with this analogy is that any convex or protruding element in the coupling element 136 in FIG. 24 of Pelka would necessarily be formed from the same material used for forming waveguide 132. Thus, any convex or protruding elements in Pelka could not be a transparent element structure with a refractive index different from that of the light guide plate as recited in claim 1.

Secondly, Pelka does not disclose *a plurality of notches extending up from underneath the bottom surface of the light guide plate; and a plurality of transparent element structures associated with the plurality of notches and having solid side walls continuously extending between first and second surfaces so that the first surfaces are within the plurality of notches* as recited in claim 1.

For example, Pelka discloses:

Display elements are formed on surfaces of the waveguiding layer to cause light to be emitted from the waveguiding layer.³

For instance, for illuminating a tail light (FIG. 22), the display elements 142 might be in the form of elongate structures, such as horizontal or vertical lines or channels in the tail light surface.⁴

A plurality of extractive display element 300 and waveguiding cylinders 302 are patterned into the surface of the waveguide 132c, as described below.⁵

Whatever convex or protruding elements may be suggested in Pelka, there certainly is no suggestion that those elements have a first surface that is within a notch and a second surface that is outside of the notch. In fact there are no notches in Pelka that contain anything, much less a plurality of transparent element structures with solid side walls having a refractive index different from that of a light guide plate.

For at least these reasons, claim 1 is patentable over Sasagawa in view of Pelka.

Claim 4 recites:

a light guide plate structure, comprising: a light guide plate, comprising at least one light incident surface, a light scattering surface and a light emitting surface, wherein the light incident surface is on a sidewall of the light guide plate, the light scattering surface is on a bottom surface of the light guide plate, the light emitting surface is on a top surface of the light guide plate, and wherein the light scattering surface has a plurality of notches;

a plurality of solid transparent element structures disposed within the plurality of notches, wherein a refractive index of the plurality of transparent element structures is different from that of the light guide plate, and wherein the plurality of transparent element structures includes at least one surface that is outside of the plurality of notches and outside of the light guide plate structure.

³ Pelka, col. 2, lines 57-59.

⁴ Pelka, col. 15, lines 48-51.

⁵ Pelka, col. 17, lines 12-14.

The examiner is reading the transparent element structures on “air” in Sasagawa’s notches. Respectfully, claim 4 recites “a plurality of transparent element structures,” whereas the air referred to is the air outside of Sasagawa’s light guide plate. The single air mass outside of Sasagawa’s light guide plate is not divided into a plurality of structures. Sasagawa has no teaching regarding any divisions that would enable segregation of air into such separate structures.

Further, claim 4 now recites solid transparent element structures. The cited teachings of Pelka’s display elements cannot teach or suggest the applicant’s solid transparent element structures since there are no notches in Pelka that retain any solid element, much less *a plurality of solid transparent element structures associated with the plurality of notches and having side walls continuously extending between first and second surfaces so that the first surfaces are within the plurality of notches and the second surfaces are outside the bottom surface of the of the light guide plate, wherein a refractive index of the plurality of transparent element structures is different from that of the light guide plate as recited in claim 4.*

For at least these reasons, claim 4 is patentable over Sasagawa in view of Pelka.

Claim 29 includes at least some elements similar to claim 1 and claim 4. Accordingly, for at least this reason, claim 29 is patentable.

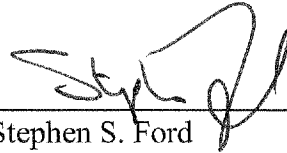
Conclusion

For the foregoing reasons, the applicants request reconsideration and allowance of the remaining claims. The applicants encourage the examiner to telephone the undersigned at (503) 224-2170 if it appears that an interview would be helpful in advancing the case.

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Respectfully submitted,

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